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# Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 198



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NUCLEBRAS DECISION TO SUSPEND SEVERAL PROJECTS DETAILED

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 3 Jul 83 p 49

[Text] Brasilia--The Brazilian Nuclear Corporation (NUCLEBRAS) has decided to delay from this year to mid-1984 the opening of public bids for contracting the civil works of the Iguape-I and II nuclear plants in Sao Paulo, Ministry of Mines and Energy aides revealed yesterday. This is the first effect in the nuclear sector of the package aimed at cutting the expenditures of the state companies announced this week which, among other measures, orders that the state companies can only authorize expenditures for investments if supported by purchase orders, service orders or pledge notes. For that reason and because of the cut of 25 billion cruzeiros from NUCLEBRAS' investments envisaged for this year (in the order of 137.5 billion cruzeiros), the company delayed the beginning of work on the Angra-III nuclear plant in Rio de Janeiro.

The contract for the civil works of Angra-III was signed on the 10th of last month with Andrade Guiterrez, the construction company that won the public bid held in December of last year, according to NUCLEBRAS aides. They pointed out, however, that the work cannot be begun this year as had been envisaged since the beginning of 1982 because of an absolute lack of funds. The aides stressed that in order to invest in that project this year, there would have to be a transfer of funds from other projects, such as Angra-II, and that would imply a reduction of its pace. "And if the current pace is reduced," they explained, "the project would be paralyzed because it has already been reduced to the maximum possible."

The aides revealed that, despite the shortage of funds and the restrictions imposed by the federal government to prevent the indebtedness of the state companies, NUCLEBRAS will maintain unchanged the operation timetable scheduled for the operation of the nuclear plants--Angra-II at the end of 1988, Angra-III in 1989, and Iguape-I and II in 1991 and 1992--in the hope that in the next few years the company's investments will compensate for the cuts it suffered in the last 2 years. For the same reason of shortage of funds, the dates scheduled for the entry into operation of Angra-II and III suffered a 2-year delay ordered this year.

The public bids for contracting the civil works of Iguape-I and II was the first commitment publicly assumed by the current president of NUCLEBRAS, engineer Dario Gomes, as soon as he assumed his post. In December 1982, his

predecessor, Ambassador Paulo Nogueira Batista, picked the Mendes Junior and Camargo Correa construction companies to perform the work, without public bids. Early this year, however, President Joao Figueiredo canceled that decision and, subsequently, Paulo Nogueira Batista was forced to request his resignation from the post.

#### Uranium Plant

NUCLEBRAS is also going to postpone for an undetermined period the beginning of construction of the pilot-plant for exploitation of the uranium from the Itataia, Ceara, uranium reserve, which Mines and Energy Minister Cesar Cals had announced last year would begin early this year. Itataia is the country's biggest uranium reserve, estimated at 137,500 tons. Up to the end of 1982, its operation was scheduled for this year but now no date is set, even for beginning the project.

The pilot-plant will serve to test the technology developed by NUCLEBRAS for the separation of the uranium and phosphate. Those two minerals are associated in that deposit and, according to Ministry of Mines and Energy experts, it is the NUCLEBRAS technology that is going to identify whether the quantity of uranium is greater or smaller than that of phosphate.

On the other hand, a uranium exploration program is being carried out in Lagoa Real, Bahia, with the work of excavation and construction of galleries, which is the first stage for the establishment of a mining-industrial complex for the production of uranium concentrate, similar to what is being done in Pocos de Caldas (Minas Gerais) since last year. The Lagoa Real reserve is estimated at 63,000 tons of uranium. Pocos de Caldas is the third largest uranium reserve in the country, with 26,800 tons. Like the Itataia project, construction of the plant for the production of concentrate in Lagoa Real remains without a scheduled date for the beginning of construction and entrance into operation.

8711

CSO: 5300/2160

## NUCLEAR CENTER INAUGURATION PLANNED FOR 1985

### Radioisotopes for Industry, Agriculture

Lima LA PRENSA in Spanish 1 Jul 83 p 4

[Text] A total of 15 professional and 25 laboratory technicians, specialized in radiochemistry in our country and abroad, will be in charge of radioisotope production in Peru from 1985 on. Presently, radioisotopes have to be imported.

When the Peruvian Nuclear Center for Research [CNIP] is fully operative, it will be able to take care of the country's needs in radioisotopes and also export this item which it must presently import, according to Engineer Manuel Castro of the Radioisotope Production Plant.

Presently, Peru has to import from the United States, France and England all radioactive material which is used in medicine, agriculture, industry, drilling exploration and secondary recovery of oil wells, metallurgy and biology. The radioisotopes will be produced at the CNIP, which basically consists of a reactor. Its equipment will come mainly from Germany with other components being mainly of Argentine manufacture.

Around the reactor will be constructed a group of laboratories whose purpose will be to produce radioisotopes and market various chemical compounds for use in biomedical, agricultural and industrial applications.

There is a total of 16 laboratories occupying an area of 3,500 square meters and equipped with essential and proper services including 10 radiochemical bell jars and 8 shielded cells for handling the radioactive material.

These special cells will be used for the production processes which will be in the hands of 15 professionals from various scientific branches and 25 laboratory technicians who have specialized in radiochemistry in our country and abroad.

### Production

Initially, the plant will be capable of producing iodine 131, gold 198, molybdenum 99, tin 113, phosphorus 32 and sulfur 35, as well as generators of technetium 99m and indium 113m.

It will also produce a series of radiodrugs under the presentation of preformations; various types of molecules will be prepared, marked with radioisotopes, and kits for "radioimmunization testing."

All this production will be subjected to strict physical, chemical and biological quality control to assure the safety and effectiveness of its use.

Continuous research and development projects will be conducted to capitalize on our experience in this field and obtain new products which have practical use in our environment.

Radioisotope production in our country will make it possible to decrease substantially our overall imports of these items and will result in a considerable increase in their use.

IPEN [Peruvian Institute of Nuclear Energy] believes that the present import of 50 curies per year will be replaced by the domestic production of 80 curies, making it necessary to import only 20 curies per year.

Presently, IPEN converts only a few of them into profitable chemical substances through the "bad interaction of compounds" with radioactive material.

It is mainly iodine 131 and technetium 99 which are imported. In the first phase of routine operation of the Hurangal plant, it is estimated that the plant will be capable of supplying 80 percent of the estimated demand which amounts to 100 curies per year.

IPEN's radioisotope division is presently getting prepared to supply some 20 different compounds used in the medical field.

Radioisotopes are chemical elements which emit radiation which makes it easy to identify them and quantify them. When introduced into some biological or terrestrial environment, they can be traced to diagnose or evaluate a given situation.

#### Research, Training Center

Lima LA PRENSA in Spanish 1 Jul 83 p 4

[Text] The CNIP plant was not designed for warlike purposes, according to a statement made by retired Gen Juan Barreda Delgado, president of IPEN.

He said that it is a research reactor qualified by the International Atomic Energy Agency [OIEA] as one of the models of peaceful development. And that its directorate is so oriented.

General Barreda said that the delay in building this plant is due to austerity measures but that financing by the Argentine Government through that country's National Bank is going forward.



Among other projects is that of using nuclear energy in the country's energy development.

The CNIP consists of a complex of buildings surrounding a small-power research reactor (10 megawatts) whose principal activity will initially be the production of radioisotopes.

It will also serve for the training of highly specialized personnel, the teaching of nuclear technology in various branches of science and for research and experimentation for public and private institutions.

Among the peripheral laboratories are those relating to electronics, neutrography, radiochemistry, reactor physics, experimental physics, activation analysis, reactor chemistry and laboratories for shop work and supplementary projects.

Adjacent to the reactor will be the plant for the production of radioisotopes; its roof will have small pyramids called skylights which will enable light to enter through the roof; these skylights replace the conventional windows and will give more light.

In a separate building will be housed the National Center for Radiological Protection and Medical Services.

To obtain meteorological information, such as wind direction and its speed and temperature, atmospheric humidity and pressure, necessary for environmental studies, there will be a meteorological tower 10 meters high.

Other complementary buildings have also been provided, such as workshops, the supply of compressed air, the production and storage of nitrogen, the treatment of drinking water and other services.

The contract signed between the IPEN and the Argentine National Atomic Energy Commission calls for a broad transfer of technology in the nuclear area from that country to ours and for active participation by Peruvian professionals in all phases of the project.

Also provided in the contract is the intensive and adequate qualifying of Peruvian personnel who will operate, maintain and conduct research at the CNIP facilities.

8568

CSO: 5100/2080

INDIA DENIES U.S. PRESS REPORT ABOUT NUCLEAR BLAST

Report on Denial

Calcutta THE STATESMAN in English 25 Jun 83 p 1

[Text] New Delhi, June 24--The Foreign Office today dismissed as totally unfounded and untrue a Washington Post report yesterday suggesting Indian preparations for a second nuclear blast in the Rajasthan desert.

The Foreign Office spokesman said the allegation, attributed to unnamed sources, that India had sunk additional shafts at its Rajasthan desert test site was totally unfounded and untrue.

The Washington Post said the difficulties in allowing the supply of spares for the Tarapur plant as a consequence of the alleged sinking of additional shafts [as printed].

The spokesman also quoted the same newspaper and the same author as making similar allegations in December 1982 and February this year.

On both the occasions, the timing like at present, generated interest.

The December report appeared just before the Non-Aligned summit. The present one comes just prior to the visit of the Secretary of State, Mr George Shultz and when there is a possibility that the USA, directly or through third parties will make available spares for the Tarapur plant.

One of these reports suggested that India was preparing to build 20 nuclear bombs.

The report was at the time based on the fact that India was reprocessing used nuclear fuel from the Rajasthan and Tarapur plants yielding plutonium.

The spokesman said it was impossible to accumulate irradiated fuel indefinitely.

He also said reprocessing entailed the production of plutonium but that was never an end in itself nor was India using plutonium for military purposes.

The situation remained unchanged and as stated by the Prime Minister, India stood committed to the peaceful use of nuclear energy, the spokesman said.

PTI adds from Washington: The Washington Post yesterday said the White House was delaying approval of the export of atomic reactor components for Tarapur because "it would require informing Congress of possible Indian preparations to stage a second underground test."

The Post supports the non-proliferation lobby and works closely with it. Sources said the Reagan Administration felt it would need to waive a key provision of the Nuclear Non-proliferation Act to supply components for India's two reactors at Tarapur.

To approve the atomic exports to India the President would need to waive the provision unless steps had been taken which "represent sufficient progress toward terminating such activities" as those at the Rajasthan site, sources said. These steps might involve filling in the test shafts which India had not done to date, the Post reported.

#### 'Report a Canard'

Madras THE HINDU in English 25 Jun 83 p 1

[Article by G.K. Reddy]

[Text] New Delhi, June 24--The Government of India today described as "totally unfounded and untrue" the reports emanating from Washington that it was preparing to explode another nuclear device in the near future.

An External Affairs Ministry spokesman said there was no basis whatsoever for the American press reports that India had sunk additional shafts at Pokhran in the Rajasthan desert with the obvious intention of conducting a second underground test for whatever purpose.

Official circles in Delhi are perplexed why the unnamed American sources have chosen to complicate the spare parts issue by raising this bogey on the eve of Mr Shultz's visit when the two countries were edging closer to an understanding on it. The Government is waiting to see whether this is only one of the periodic questions that are posed by some sections of the Reagan Administration about India's nuclear intentions, or whether there is anything deeper behind the latest allegation.

Not the first time: The same correspondent of the Washington Post who has carried this story, quoting unnamed sources, had written on earlier occasions also about India's nuclear plans in more ominous terms. In December last, he published a report that India was planning an Israeli-type pre-emptive air attack on Pakistan's nuclear installations. A couple of months later, in February this year, he reported that India had started reprocessing the spent fuel at Tarapur and already accumulated enough plutonium for making at least 20 nuclear bombs.

The Government of India is in no position to arrive at a considered judgment whether these canards are only the aberrations of an individual journalist with fairly high contacts in the State Department or whether he is being used as a surrogate by some unfriendly elements in the Reagan Administration to raise the red herring of India's nuclear ambitions from time to time to sour Indo-American relations.

U.S. Government's query: During the protracted negotiations on the continued supply of enriched uranium for the Tarapur plant during 1980-81, the U.S. Government had officially queried the Government of India whether it was planning another nuclear test at Pokhran. The information was sought on the basis of spy satellite pictures of some digging activity in the Rajasthan desert.

Satisfactory explanation: It was explained that the digging operation was taking place not at the Pokhran explosion site, but at an adjoining Army firing range for testing some missiles and other weapons. The U.S. was apparently satisfied with this explanation which was subsequently corroborated by its own satellite observations. The issue was not raised during the last two years until the unnamed sources in Washington floated this canard again.

CSO: 5100/7126

## REPORTAGE, COMMENT ON ALLEGED PAKISTAN N-EXPLOSION

G.K. Reddy Report

Madras THE HINDU in English 26 Jun 83 p 1

[Article by G.K. Reddy]

[Text]

NEW DELHI, June 25.

After considerable vacillation, the Government of India disclosed today that the monitoring station of the Atomic Energy Department at Gauribidanur near Bangalore, had recorded on June 13 a major seismic disturbance in Baluchistan. But even 12 days after the event, it was not able to confirm or deny whether this indicated that Pakistan had carried out an underground nuclear explosion.

An External Affairs Ministry spokesman said, commenting on a report in a local newspaper on the subject, that Indian experts were still studying the nature and intensity of the seismic disturbance, before arriving at a final conclusion.

The Gauribidanur seismic station was set up in 1965 by the Bhabha Atomic Research Centre with British collaboration to detect underground nuclear explosions. It recorded around 8 a.m. on June 13 a seismic disturbance with its epicentre in the Ras Koh mountain range, south-east of Quetta in Baluchistan, about 150 km from the Afghanistan border, where Pakistan is known to have been digging a tunnel for the last two years to conduct an underground nuclear explosion.

The seismic disturbance measured 4.5 on the Richter Scale. As the pattern of the seismic shock waves generated by an earthquake and an underground atomic test are somewhat different, the Indian experts are studying the available information carefully to establish whether Pakistan had, indeed, conducted a nuclear explosion.

**No quake reports:** At the moment it is at best only an intelligent surmise that perhaps a nuclear device had been tested, in the absence of any corroborative evidence of an underground atomic ex-

plosion. But the fact that there were no reports of any earthquake that day in Baluchistan has led to the conclusion that the seismic disturbance was caused by other events such as an atomic test in the range of 20 kilotons to produce a recording of 4.5 on the Richter Scale.

The Pakistan Government today vehemently denied that it had detonated a nuclear device, describing the sensational report published by a Delhi newspaper as a "mischievous canard" and a "total fabrication." But the Indian spokesman said "it could be, it may not be" when asked whether the magnitude and pattern of the seismic disturbance indicated an underground atomic explosion.

Asked whether India had taken up this matter with Pakistan, the spokesman said: "To the best of my knowledge, this subject has not yet been discussed with the Pakistan Government." It implied that India was still not certain whether this seismic disturbance was created by an underground nuclear explosion.

**Silent superpowers:** A rather intriguing feature of this episode is that neither of the two superpowers which closely monitor nuclear activities of every kind the world over, has so far said anything about the suspected explosion by Pakistan. If the U.S. has been inhibited from disclosing it immediately for political reasons, the Soviet Union would not have kept quiet had a nuclear test been carried out by Pakistan.

The acquisition of nuclear capability by Pakistan will have serious repercussions and, as the Prime Minister, Mrs. Indira Gandhi, hinted in Parliament some time back, create grave security problems in the region. The Indian public opinion will be so incensed that at some point the Government will be compelled to exercise the nuclear options.

## Military Purport 'Evident'

New Delhi PATRIOT in English 27 Jun 83 p 2

[Editorial]

[Text]

**THE military purport behind Pakistan's nuclear programme becomes increasingly evident, whether or not the seismic event near Quetta on 13 June was a successful detonation of an atomic explosive device. The Government of India has confirmed the occurrence of a fairly severe earth tremor. The cause of that seismic tremor recorded by the BARC monitoring station near Bangalore remains to be adequately explained by Pakistan. Official spokesman of the Ministry of External Affairs has said that the tremor could have been caused by an underground atomic explosion and the epicentre was in the Ras Koh range. True, it is not clear if the BARC station is adequately equipped to conclusively determine the nature of an underground tremor and thereby separate underground weapon testings from earth tremors occasioned by other causes. But Islamabad is mysteriously silent on the central fact — the occurrence of an earth tremor of an intensity which, were it an earth-quake, would have caused considerable loss of life and property. The Pakistan Government is trying to be excessively clever when it denies an underground nuclear testing without repudiating the report of a seismic event on 13 June.**

The US Government, currently engaged in massive weapons deliveries to Pakistan avowedly to dissuade the latter from a military nuclear programme, should take a closer look at the report. Meanwhile, it is well to remember that the clandestine military nuclear operations undertaken by the racist regimes of South Africa and Israel were never officially confirmed by the US Government, though a variety of agencies in that country belatedly affirmed that the Governments of South Africa and Israel had gained access to atomic weapons. Therefore, the explanation which the monitoring centre of United States and other western countries offer about what happened near Quetta on 13 June should be taken with a pinch of salt.



What does India do in the circumstances unveiling in her neighbourhood? This country is the permanent target of all inimical military preparations being made in Pakistan. The so-called Soviet threat to Pakistan arising from the crisis in Afghanistan has not altered this central fact. Pakistan has secured conventional weapons which are more sophisticated than any currently available in the other countries of South Asia. Once Pakistan was way behind India in nuclear capability. Pakistan has nearly bridged that distance and threatens to overtake this country in this vital field. It is set fair on a course which, given time, will ensure for it a military nuclear capability superior to India's. The Pakistani atomic fuel reprocessing facility appears to be more functional than India's. Two years after China invaded this country, the first Chinese nuclear device was detonated. That event demonstrated how China had overtaken and left India behind in the nuclear field, though this country had led in atomic research in Asia in the 1950s. China's thermonuclear capability has had tremendous implications for India's security. However, India has dithered for two decades in the face of this grave threat without finding an answer. Pakistan is pressing ahead to acquire a military nuclear capability, a development containing dire consequences for this country. There is no evidence that the Government of India has addressed itself to this problem or found an adequate answer. Can non-nuclear India have a credible policy of strategic defence when two of her likely adversaries are pushing ahead with military nuclear programmes? The Government of India must answer that question. There is no reason to panic. But this is not an area where even the slightest complacency can be permitted. The nuclear challenge is serious. We must formulate our response accordingly.

CSO: 5100/7127

## TARAPUR TERMED SORE SPOT IN RELATIONS WITH UNITED STATES

Bombay THE TIMES OF INDIA in English 30 Jun 83 p 8

[Article by Inder Malhotra]

[Text]

**W**HAT a telling coincidence it is that Tarapur is looming as large during Mr. George Shultz's current visit to this country as it did in the course of Mrs. Gandhi's sojourn in the United States last year! At that time her agreement with President Reagan to transfer to France the U.S. responsibility for supplying enriched uranium to the Tarapur Atomic Power Station was hailed as a major achievement. But the deal nearly came unstuck almost immediately because of differences over the type of safeguards to be applied to the French nuclear fuel, and it was with considerable difficulty that the transaction was saved from collapse.

Since the general expectation now is that the present controversy over the supply of vital spare parts for Tarapur would be out of the way before the U.S. secretary of state leaves the Indian shore, it is necessary to realise that any rejoicing over the anticipated denouement will be out of place. For one thing, by washing its hands of its own contractual responsibilities and transferring them to West Germany or Italy or both, the U.S. would be doing this country no favour, especially when the delay in the receipt of even health and security-related components has caused enough hardship already. For another, there is no guarantee that the decision in principle to get the spare parts from West Germany or Italy will not lead to the kind of hassle that took place after the responsibility for the supply of nuclear fuel was handed over to France.

## Critical Question

Above all, however, the trouble is that even if the spare parts issue is satisfactorily and speedily resolved, Tarapur will continue to be what it has been: a running sore in the Indo-U.S. relationship. This is so because the critical question of reprocessing of the spent Tarapur fuel, which has accumulated to such an extent as to exhaust the available storage capacity, is still hanging fire. Unless this issue, too, is taken up and clinched during Mr. Shultz's talks in New Delhi, it is a safe bet that bickering over Tarapur will begin afresh before long.

The baleful impact of all this on relations between the world's largest and most powerful democracies is undoubtedly sad. But it is no less a matter of concern that the discord over Tarapur symbolises vividly the U.S. determination to impose on the world the wholly inequitable and discriminatory international nuclear regime that was evolved, under its leadership, a decade ago, in the form of the nuclear Non-Proliferation Treaty (NPT), and has since been enforced through the mechanism of the International Atomic Energy Agency (IAEA).

This country's woes over Tarapur are instructive enough. But a visit to the Vienna-based IAEA recently proved even more educative inasmuch as it brought home the tenacity, range and ramifications of the stranglehold that the nuclear weapon states and their allies have on the agency for administering the non-proliferation regime. The visit took



place during the latest meeting of the IAEA's board of governors at which the frustrations and disappointments of the non-nuclear weapons states were fully articulated — among others, by the Indian ambassador, Mr. S. K. Singh, and his opposite numbers from Venezuela, Argentina, Pakistan and some other countries belonging to the group of "77" — but the helplessness of the nuclear have-nots was also manifest.

The carefully contrived composition of the 34-member board of governors, which gives undue weightage to the nuclear haves is only one of the reasons for this unhappy state of affairs. Others include the stark reality that on the need tightly to enforce the NPT regime on even those who have not signed the Non-Proliferation Treaty, the United States and the Soviet Union are one with each other. Even the current strains in East-West relations have made no difference to their unity of purpose on this score.

## Big Two Of Same View

In fact, the IAEA is the only forum in the wide world where the American and Soviet delegates speak with one voice. Equally remarkably, India and Pakistan, too, speak in similar tones and, at any rate, refrain from contradicting each other. And this brings one to yet another reason why the wholly inequitable nuclear order endures.

While the nuclear haves remain united even across the great ideological divide, the nuclear have-nots, who constitute a majority in the IAEA's 111-member general assembly, are hopelessly divided. This makes them even more vulnerable to big power pressures than they would normally have been. As many as 46 third world countries which are members of the IAEA have no interest worth the name in nuclear issues. Others, which do have such an interest, have got so involved in their own regional or parochial concerns that they can be easily manipulated.

Practically the whole of the African continent, for instance, has been dragooned into accepting the NPT regime by playing upon African fears of the nuclear ambitions and pursuits of the racist regime in Pretoria in spite of the fact that South Africa's nuclear weapons programme has had clandestine western support.

Consequently when it comes to a struggle against the unjust nu-

clear regime, there is nothing like the third world unity which has been so much in evidence in the campaign for North-South dialogue to establish a new and just international economic order.

One of the major complaints heard at the board of governors' meeting in Vienna was that the IAEA was fast expanding its safeguards and regulatory functions at the cost of its promotional activities even though the agency was established primarily in pursuance of President Eisenhower's "atoms for peace" programme. From about 10 per cent just before the signing of the NPT, the IAEA's expenditure on safeguards administration has shot up to over 30 per cent this year. In the words of Mr. S. K. Singh, the "former dutchy has become a kingdom within the empire, and now threatens to overtake the empire itself."

IAEA officials plead that in addition to the outlay on technical assistance that the agency provides from its own budget, several programmes are financed by "voluntary contributions" by member-states and these must be taken into account while comparing promotional activities with those related to safeguards. But competent third world sources point out that what goes on under the so-called voluntary contributions would not bear too close a scrutiny.

In some other areas also, the IAEA has deeply disappointed the nuclear have-nots. While the stringent provisions of the NPT and even the informal restrictions on nuclear commerce agreed to by the London club of nuclear suppliers have been rigorously enforced, corresponding obligations to those at the receiving end of the nuclear trade have been generally disregarded.

A committee on assured nuclear supplies, known as CAS, was formed three years ago to ensure that if non-nuclear weapon states are expected to respect their commitments on non-proliferation, they must have a similar guarantee that their heavy investment in peaceful uses of nuclear energy would not go waste as a result of a sudden cancellation of contracts for the supply of nuclear fuel, equipment, materials or technology.

The CAS was expected to establish a supermarket in nuclear materials and equipment with conditions of supply made known in advance. What it has produced so far is confusion and deadlock, with little sign of any agreement

being reached in the foreseeable future.

Equally intractable is the stalemate in the committee on international plutonium storage which has been addressing itself for more than five years to the problem of keeping plutonium out of "mischievous hands". Here again, the trouble arises from the fact that some third world countries at least refuse to submit to the dictates of the nuclear haves and, in the case of assured supplies, the difficulties are compounded because some nuclear exporters, such as West Germany and Japan, are also importers of nuclear materials.

## Review Talks Stymied

Nothing underscores the inequities of international nuclear politics more effectively than the manner in which a U.N.-sponsored international conference on peaceful uses of nuclear energy — better known by its interesting acronym PUNE — has virtually been stymied. There has so far been no agreement on its timing or agenda.

The reason for this is not far to seek. The nuclear weapon powers do not want to risk such a gathering until after the next review conference on the NPT, scheduled for 1985, is over. At the previous review conference in 1980 there was a fearful row because even those nuclear have-nots who have meekly signed on the dotted line were appalled that while enforcing the treaty on them, the nuclear weapon powers had done nothing at all in pursuance of their own commitment to work in "good faith" for nuclear disarmament. On the contrary, several irate delegates pointed out, the NPT had become a licence for vertical nuclear proliferation. The axe had fallen on only horizontal proliferation. No wonder, the 1980 conference dispersed without being able even to issue an agreed communique.

Herein indeed lies the nub of the issue and it underlines how ironical has been the evolution of the IAEA since its birth in 1957. For at that time, the late Dr. Homi Bhaba had declared that India was accepting the agency's safeguards system only "provisionally" and in the hope that in a few years there would be enough progress towards disarmament as a result of which "these measures will either apply to all countries equally or will become unnecessary."

## PAPER QUESTIONS MOTIVATION FOR TARAPUR RADIATION REPORTS

New Delhi PATRIOT in English 4 Jun 83 p 5

[Article by N. N. Raina]

[Text]

A major daily reported recently with a fanfare on its front page that:

"The Tarapur Atomic Power Station (TAPS), which has broken several world records in exposing nuclear plant workers to excessive doses of harmful radiation, is now crippled by the very high levels of radioactivity present in it."

The following day a legal practitioner was also found threatening to bring a writ petition before Delhi High Court "seeking protection of life and liberty of staff and workers of TAPS, and other inhabitants who are being exposed to dangerous and fatal levels emanating from the power station."

Within two days the chairman of the Atomic Energy Commission, Shri H N Sethna, wisely called a press conference and placed all the facts before the nation. Deviations from the norms set by the International Commission on Radiological Protection (ICRP) have been a very marginal character, except in 1975 when 200 people had been somewhat overexposed under exceptional circumstances. No case of proved harm has, however, been noticed ever since 1969 when the plant started working. It was obvious from the coverage in the media that the nation felt reassured. The prestigious Madras daily commented on the bizarre episode in these words:

"The alarmists seem to have constructed their case on exposure to radiation on hearsay rather than on reliably recorded data, or even elementary facts

of reactor performance."

The expert global status of ICRP on questions of radiological protection is accepted by the International Atomic Energy Agency (IAEA). The relevant ICRP directive reads:

"Those who are exposed to radiation in the course of their occupation shall not receive a dose greater than 5,000 millirems (5 rems) per year. For a number of the public this dose shall not exceed 500 millirems per year, nor a lifetime average of 100 millirems per year."

A British authority on radiation exposure, Prof J H Fremlin, is on record as stating:

"A dose of 400 rem (that is 400,000 millirems) delivered within a few minutes to the whole body, will give a 50 per cent chance of death within a few months as a result of damage to the lining of the gut. As we have efficient but slow repair mechanism, however, a uniform dose of several thousand rems a year would not be lethal. Our natural background from cosmic rays, local gamma rays, and from potassium-40 in our bodies, plus the unavoidable dose from inhalation of radon derived from building materials, is usually between 100 and 150 millirems a year..."

"The best present estimate due to ICRP gives a probability of 1 in 10,000 per rem, (1 rem=1,000 millirem) of whole-body dose that an individual receiving it will die of a malignant disease after a delay of 5 to 30 years or more. The probability of producing a serious mutation appears to be the same but with a larger fac-

tor of uncertainty."

In this situation one may wonder why such a bowl was raised by people with easy access to expert advice. Here one cannot but agree with the diagnosis of the preceptive Madras daily, which in its editorial of 13th May furnished the clues. We quote:-

'Issues of nuclear safety are quite difficult to sort out, especially because (to the campaigners) opposition to nuclear power is either reflexive or part of an ideological stance. In the Indian case the nuclear programme has been nurtured through a sort of national consensus... but the venture has had to contend with a less-than-helpful, and even hostile international environment and there has been an active external campaign directed against it on many fronts (e.g. withholding of fuel and spare-parts Editor). The non-proliferation warriors have had in their armoury questions, doubts, and allegations related (among other things) to the safety of Tarapur, but none of these has come to India through an authoritative, expert or official channel. Nor has the IAEA, which has closely been involved at Tarapur as the administrator of external safe-

guards, at any time called into question the safety of the basic operation'.

Whatever the temporary shortcomings in the running of TAPS or any other power station may or may not be there, can be no turning back from atomic energy for a poor country like ours. At the end of 1982 there were 294 power reactors in 25 countries, with a power output of 173,108 MW i.e., equivalent to the aggregate output of more than 170 Bakhra complexes. Whereas in France, Finland, and Sweden nuclear power provides 40 per cent of the total output, even in US, loudest in decrying atomic energy, it constitutes 12 per cent of its vast output. At a 'Conference on Nuclear Power Experience' held in Vienna at the close of 1982, W Kenneth Davis of the US Department of Energy stated in his paper: 'There is a growing need for electric energy and nuclear energy in the US. Although we are still adjusting to the new realities of the economic growth and energy consumption, we (the nuclear industry) can make a unique contribution to this need'. One thinks of the old adage: 'What is Sauce for the goose...'

CSO: 5100/7118

## THIRD PARTY MAY SUPPLY TARAPUR SPARE PARTS

Madras THE HINDU in English 13 Jun 83 p 1

[Article by G. K. Reddy]

[Text]

NEW DELHI, June 12

An understanding in principle — that is different from an accord on substance — has been reached by India and the United States to resolve the controversy over the supply of spare parts for Tarapur, if possible, by bringing another third country into the picture as was done in the case of fuel supply with France assuming this responsibility during the remaining 10 years of the 1963 agreement.

The US had suggested as a starting point for these negotiations that, while an effort will be made to find a way out to supply certain types of safety related generic spares within the framework of the Non Proliferation Act, the other 30 odd items could perhaps be provided by a country like West Germany, and in one or two cases even Italy, if the safeguards questions are sorted out to mutual satisfaction.

The discussions that have been going on between the US Ambassador, Mr. Harry Barnes, on the one hand and the Principal Secretary to the Prime Minister, Dr. P. C. Alexander, and the Foreign Secretary, Mr. M. K. Rasgotra, on the other are still inconclusive. The talks will be resumed next week after the two senior Indian officials who are accompanying the Prime Minister, Mrs. Indira Gandhi, on her current European trip, return to Delhi.

**Reassuring note**

Meanwhile, the US envoy struck a reassuring note at a meeting of the Press Guild in Bombay the other day when he said that a solution to this problem would be found soon. Though he did not say that an effort would be made to settle it before the arrival of the Secretary of State at the end of this month, Mr. Barnes implied that the issue would be taken up during the Shultz visit.

There are two categories of nuclear and non nuclear spare parts that are required for the reactor equipment and the power generation turbines. The nuclear items include mechanical seal assemblies for the recirculation water pumps and source range and intermediate range monitors for measuring the

flux inside the reactors during fission. The non-nuclear spares are for the turbines, switch-gear and other equipment used for power generation and transmission from the plant.

The Government of India has been told that US experts, who are well acquainted with the operation of the Tarapur reactor, do not share the Indian concern about safety hazards as a result of non-availability of these spare parts. They think that India can carry on with the present level of leaks of radioactive fluids as a result of faulty mechanical seals in the water pumps for at least two or three more years without replacement, although there will be some maintenance problems.

**No verbal promises**

The Indian case is that the US has not only not supplied any spares since 1979 but has gone back on the oral assurances given that these parts would be provided after the fuel supply issue had been settled by bringing France into the picture. The US continues to deny that any such verbal promises were made, maintaining that it was regrettable if the Indian officials had misconstrued anything that was said at that time as a firm commitment to resume the supply of these spare parts.

The Indian atomic engineers have tried to make the mechanical seal assemblies for the leaking water pumps but the effort has not been entirely successful. Though the Tarapur operating staff continue to carry on without these spares, the situation is quite unsatisfactory from the point of view of both safety and maintenance of the reactor equipment.

As a member of the London suppliers group, West Germany is under obligation to insist on a certain level of safeguards for the supply of these spares. But since what it is required to do is only an on-going responsibility under the 1963 agreement, there should be no great legal difficulty in adopting the same procedure as France has done.

**Undefined right**

The difficulty will arise only if France decides to invoke at some point its undefined right to discuss arrangements to ensure that the fuel supplied and the by-products derived from it would continue to be used for peaceful purposes. It remains to be seen whether West Germany, too, would insist on a similar provision if it finally agrees to supply these spare parts as a special gesture to India at U.S. request.

All these issues and their implications will have still to be sorted out among the three countries before the new arrangement could be finalised for the supply of these spare parts. It should not be too difficult for German firms to make these spares available since they have made equipment for the light-water moderated and enriched uranium fed nuclear power stations in that country under licence. A few items will have to come from the U.S. itself but the rest could be provided by Germany if the political aspects are settled to India's satisfaction.

CSO: 5100/7121

FIRST INDIGENOUS ATOMIC POWERPLANT COMMISSIONED

Delhi Domestic Service in English 3 Jul 83 p E1

[Text]

The Kalpakkam atomic power station near Madras has been commissioned. The plant's first unit attained criticality around 2100 last night. With the commissioning of this atomic power station, India has entered a new phase in its atomic energy program and joined a select band of countries which have the capability to design, build, and commission nuclear power stations. The other countries are: the United States, the Soviet Union, Britain, France, Sweden, Japan, and West Germany.

This atomic station is the first nuclear powerplant to be built in the country fully indigenously. Before it went critical, several statutory and exacting tests were done on the insulations to establish its reliability of the safety and control system. The 235-megawatt first unit will start generating power in a month's time. Low power tests are planned for about 3 to 4 weeks after which steam produced by the reactor will be supplied to the turbine for generating electricity which will be supplied to the southern grid.

The commissioning of the plant will enable India to accelerate the program of producing electric power by harnessing the atom. It will help speed up the industrial and agricultural development. The chairman of the Atomic Energy Commission, Dr H.N. Sethna, has described the event as historic. He was present at the plant when it went critical.

CSO: 5100/4719



## NUCLEAR FUEL COMPLEX PROCESSING IMPORTED URANIUM

New Delhi PATRIOT in English 19 Jun 83 p 5

[Text]

HYDERABAD, June 18 (PTI) —A total of 19.8 tonnes of enriched uranium for one year (1983-84) received from France by the Nuclear Fuel Complex (NFC) here is being processed into fuel elements to be sent to Tarapur power plant some time in October for generation of electricity.

The enriched uranium in the form of a gas (QF6)-uranium hexa fluoride when compressed solidifies, in which state it was brought in cylinders a month ago to the NFC.

The uranium hexa fluoride is converted at the complex into uranium dioxide into the solid form of small pellets.

The uranium dioxide in powder form initially is pressed and sintered at high temperatures into dense pellets, the pellets are later put in cylindrical zircalloy tubes, it is learnt.

These pellets are neatly packed in cylindrical tubes nearly 12 feet in length and made of zircalloy (zirconium 98 per cent and tin two per cent). Called fuel elements, they are placed in the reactor at the power station in bundles of 36.

In the reactor at Tarapur zircalloy and stainless steel material are used in the inside and

outside where the fuel elements are put.

However the fuel and design of a reactor using natural uranium will be different.

Radiation activity of uranium is low compared to X-rays or gamma rays. Yet workers are supposed to wear gas masks and gloves inside the main plant.

Once these fuel elements are put into the reactor the process of generation of electricity is through nuclear fission. Due to this fission lot of energy in the form of thermal (heat) is generated. This heat is used to run a turbine which is again connected to a generator for producing electricity, it is learnt.

The only difference between the conventional method described above and the one in atomic reactor at Tarapur is that the latter does not require heavy water as moderator, whereas other reactors using uranium in the natural form need it as moderator.

Any hazards that accrue here due to the activity generated as a result of the fission products that emerge during the process, are harmful to man.

And zirconium being highly pyrophoric in powder form can ignite even at the slightest rub with the hands.

## EDITORIAL ASSESSES WORK OF INTERNATIONAL ATOMIC AGENCY

Madras THE HINDU in English 16 Jun 83 p 8

[Editorial]

[Text]

IN THE ASSESSMENT of the International Atomic Energy Agency, the "good safety record" of commercial nuclear power plants over 1982 has helped the "recovery from the Three Mile Island syndrome." The reference is to a situation following the worst nuclear reactor accident that the West has known (March 1979), as a result of which public attitudes to nuclear power hardened, the opposition gained influence and credibility and governments with major nuclear programmes — especially in Europe and Japan — were obliged to respond with reviews of operating, siting and safety procedures and, in most cases (as an expert review done for the U.S. Congress points out), "distance themselves from American nuclear designs, regulations and practices." The accident has now gone into nuclear folklore, but the message remains — "imprecise in substance", negative in the main and still subject to conflicting interpretations. The two extreme stances taken in the aftermath are these. One sees Three Mile Island as actualising the fears and warnings relating to the inherent safety of civil nuclear technology, dramatised in Jane Fonda's "China Syndrome" — a film in which a nuclear reactor gets out of control and very nearly causes a "meltdown". At the other pole, a cocky air tends to be assumed by some technocratic advocates of nuclear power who view the problem basically as one of bad or ill-motivated publicity and public overreaction. Sensibility and responsibility on nuclear safety issues must instinctively steer clear of these either-or stances.

In the main, the International Atomic Energy Agency continues to function as an agent of the discriminatory global nuclear bargain: perhaps it cannot be otherwise, given the rules of the game. Its approach to "non-proliferation", its advocacy of "fullscope" safeguards only for the non-weapon powers, its suspicions in regard to the possibility of "diversion" (in relation to countries, like India, which refuse to accept the discriminatory regime), reflect the negative and obstructive side. However, there are areas such as nuclear safety where the IAEA's solid work — by way of research, systematisation of information and evolution of norms, guidelines and standards — entitles it to a leadership role that can be accepted by all the players. The organisation's latest Nuclear Safety Review — the second in a series of annual reports to its Board of Governors — has found that in 1982 "safety-related operational events due to equipment failure or human error continued to occur, but safety systems were able to cope with them and the overall effectiveness of safety features and procedures was demonstrated." For one thing, there were no accidents which adversely affected the surrounding population or the environment and there were no "significant releases" of nuclear materials traceable to accidents. In fact, the data available to the IAEA suggest that "the total radiological impact of the nuclear industry shows a trend of consistent decrease in terms of dose to the public per unit of energy produced", and the total radiological impact on the public from nuclear power produc-



tion from its inception to the present "corresponds to less than one day of exposure to radiation from natural sources." Such statistics are reassuring, no doubt, although — in view of the highly charged nature of the field — it can be assumed they are not going to make much impact on a determined opposition. From a safety standpoint, two positive events of 1982 were the publication by the IAEA of a refined set of Basic Safety Standards for Radiation Protection, which incorporates the new system of dose limitation recommended by the respected trend-setter in the field, the International Commission on Radiological Protection (ICRP); and an expert assessment by a U.N. committee of the radiological impact of nuclear power operations and other nuclear cycle activities round the world.

Two suggestions made by the IAEA in its latest safety review must find unqualified support from India. The first is that nuclear power plant design has matured to the point where a high level of international standardisation is on the agenda and there can be little or no deviation from "the growing international consensus on the basic safety features for nuclear power

plants." Advanced innovations cited in the review include the use of filtered venting to guard against a radioactive emergency at the Barsebaeck nuclear station in Sweden, new design features introduced for nuclear district heating plants built to serve the towns of Voronezh and Gorki in the Soviet Union, and a state-of-the-art double containment system developed in France. The second suggestion is that, given the large number of nuclear power plants operating (some 300 in 25 countries, which have so far accumulated over 2800 reactor years of experience), a world-wide incident reporting system has become necessary — so that the experience can be generalised and learnt from by experts as well as lay people everywhere. This presupposes the institution of reliable national incident reporting systems and democratic norms concerning the public's right to know about all aspects of nuclear safety. India must continue to resist the discriminatory application of the rules of the nuclear game — especially in respect of externally administered safeguards — but on safety issues there must not be the slightest suggestion that its programme and experience can constitute an exception to internationally evolved norms and requirements.

CSO: 5100/7122

## BRIEFS

**NARORA PLANT END-SHIELDS--BOMBAY, June 4--**The first of two end shields for unit one of the Narora Atomic Power Project in Uttar Pradesh, designed and fabricated in Bombay, was despatched from here by a special tractor-trailer, a press release of the department of atomic energy said. The end shields, weighing 68 tonnes each and 6.35 metres in diameter and one metre in height, which prevent both nuclear and heat radiation from coming out of the nuclear reactor, have been fabricated according to an advanced design. They are superior to end shields installed at the Rana Pratap Sagar and Kalpakam Nuclear Power Projects. The end shields were designed by the power projects engineering division of the department of atomic energy and fabricated by Larsen and Toubro at their Powai works. [Bombay THE TIMES OF INDIA in English 5 Jun 83 p 9]

**IAEA COMMENTS PROTESTED--VIENNA, June 9--**Although India is understood to have persuaded the International Atomic Energy Agency (IAEA) Director-General to correct his remarks equating Pakistan's Kamup reactor and India's Rana Pratap Sagar reactor safeguards positions, the agency's safeguards information report for 1982 is said to contain unfair comments on India. The matter was taken up yesterday by the Indian representative. Mr. S. K. Singh, at the IAEA Board of Governors meeting. The report now before the governors did not tally with the line taken by the Director-General, Mr. Singh is said to have pointed out at the meeting. Although the report does not mention India by name it implies that the existence of non-safeguarded facilities in India made the agency's verification work difficult. At the same time, the report left out Israeli non-safeguarded reactors from the linkage. India also raised strong objection to the continued association of South Africa in the agency's technical group and its nuclear cooperation with certain nuclear weapons states despite the U.N. embargo. [Madras THE HINDU in English 10 Jun 83 p 5]

**FIFTH NUCLEAR PLANT--MALDA--June 17 (PTI)--**The fifth 2000-MW atomic power plant of the country will be set up in one of the southern States to meet their growing power needs, according to Union Minister of State for Energy Chandra Shekhar Singh. An expert committee appointed by the Centre to select the site is expected to submit its report by next month, he told newsmen here yesterday. He was here in connection with the inauguration of a blood bank at the Eastern Railway Hospital. Mr Singh said that the proposed plant in the south would be included in the seventh Plan. He, however, ruled out the possibility of setting up an atomic power plant either in West Bengal or Bihar where, with abundant coal availability, thermal plants could be set up. [Excerpt] [New Delhi PATRIOT in English 18 Jun 83 p 5]

GANDHI-IAEA CHIEF TALKS—Contrary to the impression in western quarters, today's talks between the Prime Minister, Mrs Indira Gandhi and the Director-General of the International Atomic Energy Agency, Dr Hans Blix, did not deal with the question of safeguards for India's nuclear installations. Mrs Gandhi reportedly told Dr Blix there were no bilateral problems between India and the Agency and her government counted a lot on the IAEA. The Agency, in her opinion, concentrated more on the non-proliferation treaty rather than the promotional aspects of nuclear energy. Some countries, she noted, blamed India for its peaceful use of nuclear power but turned a blind eye to the actions of others and even surreptitiously helped them. The meeting with Dr Blix figured at Mrs Gandhi's press conference today. She said she did not discuss the question of safeguards, since the Agency was aware of New Delhi's position. [Text] [Madras THE HINDU in English 18 Jun 83 p 1]

MADRAS NUCLEAR PLANT--New Delhi, June 27--Nuclear engineers are keeping their fingers crossed as India's third nuclear power plant is getting close to attaining criticality. Almost all preparatory steps have been taken and now only the precise timing of starting the chain reaction at the Madras atomic power project remains to be decided. The reactor becomes "critical" when a sustained controlled nuclear chain reaction is achieved. The loading of fuel--natural uranium--and heavy water has been completed. The first almost entirely indigenously designed and fabricated atomic power plant will start commercial generation of power by September, it is estimated. The first 235-Mw unit will supply power to Tamil Nadu which is starved of power and is facing a drought. The second unit of the Madras atomic power project is expected to go "critical" by the end of next year. When the first unit goes "critical," India would have reached another milestone in nuclear technology. While the Tarapur plant was a turn-key project, the Rajasthan atomic power project (Kota unit) was partially aided by Canada. Like the Kota unit, the Madras unit will also use natural uranium as fuel. It will also use heavy water but in this case, the entire supply has come from indigenous sources and hence the plant will not be covered by any international safeguards or bilateral agreement. The plant has been delayed by more than a decade but that was the price the country had to pay for achieving self-reliance. The unit was almost ready more than two years ago but could not be commissioned because adequate heavy water from indigenous sources was not available. [Text] [Bombay THE TIMES OF INDIA in English 28 Jun 83 p 7]

CSO: 5100/7128

MORE DETAILS ON ALLEGED NUCLEAR TEST REPORTED

Delhi PATRIOT in English 26 Jun 83 pp 1, 7

[Article by R. K. Mishra]

[Text]

Pakistan's nuclear tunnel in the Ras Koh mountain range in Baluchistan might have caved in on 13 June, according to competent observers.

Experts are also of the view that the equipment brought to the test site for detonating the nuclear device might also have been damaged.

Experts monitoring Islamabad's atomic bomb programme do not rule out the possibility that Pakistan's attempt to detonate the nuclear device went awry due to last-minute technological complications which Pakistani scientists could not handle and, therefore, they failed to carry out a "clean" and fully successful explosion.

A leading expert told me on Saturday that in all probability the nuclear tunnel which Pakistan had constructed in the Ras Koh range, south east of Dalbandin, caved in on 13 June. The tunnelling activities are confirmed by the satellite photographs. It is also possible that the equipment brought to the test site by Pakistan was damaged. This explains the intriguing Pakistani silence about the seismic event.

It is difficult to verify at this stage if there were any casualties. It is possible that the Pakistani authorities decided to keep their mouth shut so as to prevent panic about radiation hazards.

New Delhi has reasons to be satisfied at the alertness of the scientific institutions and the efficacy of monitoring arrangements in this country. The precision and accuracy with which the Gauribidnaur centre recorded the seismic event near Quetta on 13 June shows that India is keeping a close watch over Pakistan's nuclear programme and that Islamabad will not be able to carry out any test's without India knowing about it.

Indian nuclear scientists are following the developments closely and there is no cause for panic, these sources said. Appropriate steps are being taken and Indian response will be formulated with care, they added.

All the related scientific and technical data collected by scientists about this event has been collated and is being evaluated.

Experts are also engaged in investigating the real reasons of Pakistan's complete silence on this event. Several hypotheses are being examined in the light of available data.

A few years ago Pakistan had signed a contract with C.E.S. Kalthoff in Freiburg for the supply of components needed for a fluorine plant which is a crucial component in enrichment technology.

Pakistan has been following the centrifuge technique, the advantage of this technique being that the drums that rotate can be added on as and when they are available. The drums are made of hardened martensitic steel. Dr Abdul Qadir Khan, director of the Pakistan Enrichment Programme, is believed to have procured 6,200 martensitic age-hardened steel tubes. The supply was obtained from companies in the UK, Netherlands, Switzerland, West Germany and the U.S.

Vakkum Apparate Technick, a firm in Haag, Switzerland, had supplied vacuum related high precision instrument to Pakistan. KORA, another Swiss engineering firm, supplied evaporators and condensers which are vital for operation of a hexafluoride plant.

The German firm Team Industries and Dutch firm (?Walgate) supplied invertors to Pakistan. The component heightens electric frequency, speeding up the centrifuge process to separate the fissionable uranium (U-235) from natural uranium.

Kennedy Airport officials had intercepted zirconium being loaded on a plane. It was being exported to an ex-Pakistan Army colonel, Dr Sarfaraj Mir, through S.J. Enterprises.

U.S. sources also confirmed that at Khuta, near Islamabad, an unsafeguarded enrichment plant was under construction. It was protected by air-defence missiles and subject to tight security. The then Assistant Secretary of State Thomas Pickering went on record during a U.S. Senate hearing that at the Pakistan Institute of Science and Technology near Islamabad there was also in existence a pilot reprocessing plant.

The Pakistan Embassy, expectedly, denied in Delhi on Saturday that Islamabad had exploded a nuclear device. But the embassy denial was cryptic; it did not deny the occurrence of the seismic event which was monitored at the BARC [Bhabha Atomic Research Center] centre near Bangalore. Pakistan has also not explained the reasons of its silence about the event if it was a normal earthquake.

Mr Agha Shahi, the then Foreign Minister of Pakistan, had made it clear in 1981 that his Government had given no undertaking about renunciation of nuclear explosions.

President Reagan has backtracked his predecessors' commitment, at least during the early period of the Carter tenure, on non-proliferation. In fact, the U.S. has been leaving enough loopholes to enable Pakistan to go ahead with acquisition of

nuclear capability as well as obtain sophisticated military hardware from Washington. It was obvious from the argument advanced by U.S. Assistant Secretary of State James Buckley in a letter to *The New York Times* in which he drew a distinction between explosion of a peaceful nuclear device and a nuclear weapon.

In a bid to take advantage of this distinction, a Pakistani Foreign Ministry spokesman's statement in Islamabad on Saturday denying the explosion of a nuclear device said that "The Government of Pakistan has reiterated on numerous occasions that it has no intention to develop nuclear weapons." The press note, full of fulminations against *Patriot*, does not deal with the central issue: Did a seismic event occur on 13 June with the epicentre south of Quetta? Is it true that its magnitude was around 4.5 in the Richter scale? If so, why did the Pakistani Government remain silent about it?

Knowledgable sources recall that, though Islamabad has been denying any plans to make a nuclear bomb, the Pakistani Embassy in Washington had asked Mr John Phillips of Princeton University for his 34-page report entitled "An assessment of the problems and possibilities confronting a terrorist group or a non-nuclear nation attempting to design a crude Pu-239 Fission Bomb."

CSO: 5100/4720



# FRENCH REACTOR POSSIBLE IN PAKISTAN

London AL-DUSTUR in Arabic No 290, 13 Jun 83 p 36

[Text] The United States, Britain, and the Netherlands are disturbed by France's announcement of its readiness to supply Pakistan with equipment for a 900 megawatt nuclear reactor.

This is in line with Pakistan's desire to complete the building of its nuclear plant in the Shashma region, which is on the banks of the Indus River 150 miles southwest of Islamabad.

Observers believe this step is a reply to American plans which call for combating Pakistan's efforts to stimulate its nuclear program.

The French say in this regard that Pakistan has to accept some "kind" of international supervision of this program. Compliance to periodic inspection of Pakistani nuclear installations is not complete control.

Since the middle of last year the American administration has been trying to pressure its European allies and Japan not to provide Pakistan with equipment and a reactor until it agrees to comprehensive international control. Britain and the Netherlands agreed with this American approach. As for Belgium and Japan, it is difficult for them to do anything practical to block the American plans in this connection. The reason is that building any nuclear equipment in their countries requires technical materials licensed by the United States. West Germany cannot provide what Pakistan needs because of domestic antipathy to nuclear armament. Regarding the obstacle faced by Spain as an exporter of nuclear equipment, it consists essentially in technological shortcomings that prevent it from manufacturing this equipment. Thus, France remains the only country that is working hard to obtain contracts for the export of nuclear materials and equipment.

The Pakistani nuclear installations, which are not subject to any control, are located around the city of Islamabad, with a nuclear plant in Kahuta to enrich uranium and another small plant that operates to develop the by-products. The last plant, located among the installations of the Pakistani Institute of Nuclear and Technical Sciences, can produce or extract plutonium from the reactor wastes that can be used to make a nuclear bomb.

Despite the intentions of the French authorities to supply Pakistan with nuclear materials, the United States is sparing no effort to persuade the French to cancel their deal with Islamabad. Should the American administration be unsuccessful, observers believe the only alternative remaining for Washington is to attempt to block the financing of the project, estimated to be worth more than \$1.7 billion. It appears, therefore, that the coming days are likely to reveal what approach the Pakistanis will adopt in their nuclear efforts in the midst of this multisided dispute.

5214

CSO: 5100/4723



CANADIAN NON-COOPERATION IN NUCLEAR PROGRAM RESENTED

GF171148 Karachi NAWA-I-WAQT in Urdu 10 Jul 83 p 3

[Editorial: "The Nuclear Field--Opposition to Pakistan Only"]

[Excerpts] The Canadian foreign minister, Mr MacEachen, told correspondents prior to his departure from Islamabad that he could not reach an agreement with Pakistani officials on the issue of supplying equipment for Pakistan's nuclear program.

Therefore the expectations of Canada's assistance in Karachi's nuclear powerplant, which has been set up with Canada's cooperation, could not be fulfilled and the restriction on fuel or accessories will continue.

The Canadian foreign minister's remarks though unpleasant were not unexpected. He did explain that, with countries which do not sign the nonproliferation arms treaty and give complete guarantees, no cooperation will be possible in the nuclear field. The Pakistanis are justified in expressing the opinion that Canada is also one of those Western countries which deny Pakistan and only Pakistan from having access to nuclear technology, merely because it is a Muslim country and to prevent the Islamic world from acquiring a new and inexhaustible source of energy. Another reason given is that it will manufacture an atomic bomb and hand it over to Saudi Arabia which in turn might use it to destroy Israel.

Although these reasons given by the West are very ridiculous and fallacious, their traditional prejudice against Islam and Muslims has been so aggravated by the aggressive Zionists that although they feel the need for the goodwill and cooperation of the Islamic world against communism, they "smell blood" the minute the Islamic countries' economic, industrial or scientific and technological progress is in question.

President Reagan displayed a slight change in policy due to the situation created by the Soviet occupation of Afghanistan and has signed a long-term agreement for the sale of armaments in order to strengthen Pakistan's defense position and for some economic aid, but as far as opposition to Pakistan's limited and peaceful nuclear program goes, the intensity in his "opposition for the sake of opposition" has not subsided.

The recent and very conspicuous proof of this is that the United States has assured India of supplies of fuel and accessories for its Tarapur plant and so has France. Therefore, Canada's attitude is a source of sadness for the people of Pakistan because Canada has provided generous assistance in its other economic and industrial programs for which the people of Pakistan are grateful, but instead of adopting a sympathetic and realistic attitude vis-a-vis Pakistan's nuclear program, it has emulated the U.S. policy of "opposition for the sake of opposition."

CSO: 5100/4724

GABON

BRIEFS

NUCLEAR POWER PLANT STUDY--This week, France and Gabon began studies on the possibilities of constructing a nuclear power plant in Gabon, it was learned yesterday from an informed source in the Gabonese capital. The same source added that a delegation from SOFRATOM (French company for studying and carrying out nuclear projects), led by the president of its board of directors, Mr Armand Luxo, is presently in Libreville. This delegation was received on Wednesday by the president of Gabon, Mr Omar Bongo, in the presence of the French ambassador to Libreville, Mr Pierre Dabezies. It should be recalled that the project for possibly setting up a nuclear power plant in Gabon was submitted to President Francois Mitterrand by President Omar Bongo last January, during the French president's official visit to Gabon. The French head of state, who a priori saw no obstacle "to the principle of delivery of a power station," nevertheless felt that some prospective studies were necessary in order to determine the type of power station Gabon needs in relation to its other energy resources. [Text] [Niamey LE SAHEL in French 1-3 Jul 83 p 6] 9895

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August 12, 1983